AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the application.

Listing of Claims

1. (Currently Amended) A treatment assembly for providing ultrasonic and electromagnetic stimulation to a treatment area adjacent to a bone defect or injury, said assembly comprising:

at least one ultrasonic transducer assembly having at least one ultrasonic transducer;

at least one electromagnetic coil assembly having at least one electromagnetic coil operatively associated with said at least one ultrasonic transducer assembly;

a placement module configured to be worn by a patient, said placement module being configured to receive said at least one ultrasonic transducer assembly and said at least one electromagnetic coil assembly such that when said placement module is worn said at least one ultrasonic transducer and said at least one electromagnetic coil are positioned to ~~focus~~ provide modulated ultrasound energy and electromagnetic energy towards said treatment area adjacent to the bone defect or injury, wherein the at least one electromagnetic coil is adapted to be selectively positioned in different orientations with respect to the ultrasonic transducer to vary the modulation of the ultrasound energy towards said treatment area adjacent to said bone defect or injury; and

a main operating unit for providing at least one driving signal to said at least one ultrasonic transducer assembly for driving said at least one ultrasonic transducer and said at

least one electromagnetic coil to provide ultrasonic and electromagnetic stimulation to said treatment area adjacent to the bone defect or injury.

2. (Original) The treatment assembly according to claim 1, wherein said main operating unit is coupled to said at least one ultrasonic transducer assembly by a first cable and said at least one electromagnetic coil assembly by a second cable for providing said at least one driving signal to the at least one ultrasonic transducer assembly and said at least one electromagnetic coil assembly at different times and at varying periods.

3. (Original) The treatment assembly according to claim 1, wherein said at least one electromagnetic coil is positioned at an angle θ with respect to a horizontal axis of said at least one ultrasonic transducer, wherein θ is greater than or equal to zero degrees and less than or equal to 90 degrees.

4. (Original) The treatment assembly according to claim 1, wherein said at least one electromagnetic coil is wrapped around said placement module.

5. (Previously Presented) The treatment assembly according to claim 2, wherein said at least one ultrasonic transducer is positioned closer to said treatment area than said at least one electromagnetic coil when said placement module is positioned in proximity to said treatment area adjacent to the bone defect or injury.

6. (Original) The treatment assembly according to claim 1, wherein said placement module is constructed from a conductive material and said at least one ultrasonic

transducer and said at least one electromagnetic coil are electrically coupled to said main operating unit via said conductive material.

7. (Original) The treatment assembly according to claim 1, wherein said at least one ultrasonic transducer includes means for receiving reflected diagnostic data.

8. (Original) The treatment assembly according to claim 1, wherein said at least one electromagnetic coil provides a non-uniform electromagnetic field.

9. (Currently Amended) A method for ultrasonically and electromagnetically treating tissue and bone defect or injuries, said method comprising:

providing a main operating unit having an internal power source coupled to at least one ultrasonic transducer assembly and at least one electromagnetic coil assembly, said at least one ultrasonic transducer assembly includes at least one ultrasonic transducer, said at least one electromagnetic coil assembly includes at least one electromagnetic coil;

providing a placement module configured to receive said at least one ultrasonic transducer assembly and said at least one electromagnetic coil assembly such that when said placement module is secured to a patient's body said at least one ultrasonic transducer and said at least one electromagnetic coil are positioned to ~~focus~~ provide modulated ultrasound energy and electromagnetic energy towards a treatment area adjacent to a bone defect or injury, wherein the at least one electromagnetic coil is adapted to be selectively positioned in different orientations with respect to the ultrasonic transducer to

vary the modulation of the ultrasound energy towards said treatment area adjacent to said bone defect or injury;

exciting said at least one ultrasonic transducer to impinge ultrasonic waves towards the treatment area adjacent to the bone defect or injury; and

exciting said at least one electromagnetic coil to create an electromagnetic field.

10. (Original) The method according to claim 9, wherein said steps of exciting said at least one ultrasonic transducer and said at least one electromagnetic coil are performed simultaneously by transmitting a control signal from said main operating unit.

11. (Original) The method according to claim 9, wherein said steps of exciting said at least one ultrasonic transducer and said at least one electromagnetic coil are performed independently by transmitting from said main operating unit at least a first control signal to excite said at least one ultrasonic transducer to propagate ultrasonic waves and by transmitting at least a second control signal to excite said at least one electromagnetic coil to generate magnetic field lines.

12. (Original) The method according to claim 11, further comprising the step of varying a magnitude of said first control signal to vary a transmission power of said propagated ultrasonic waves.

13. (Original) The method according to claim 11, further comprising the step of varying a magnitude of said second control signal to vary a magnetic level of the magnetic field lines.

14. (Original) The method according to claim 9, further comprising the step of orienting said at least one electromagnetic coil at an angle θ with respect to a horizontal axis of said at least one ultrasonic transducer.

15. (Original) The method according to claim 14, wherein θ is greater than or equal to zero degrees and less than or equal to 90 degrees.

16. (Original) The method according to claim 9, further including the step of receiving reflected diagnostic data by said at least one ultrasonic transducer.

17. (Original) The method according to claim 9, further comprising the step of securing said main operating unit within a carrying case for providing patient mobility during treatment.

18. (Original) The method according to claim 9, wherein said step of exciting said at least one electromagnetic coil creates a non-uniform electro magnetic field.

19. (Currently Amended) A method for ultrasonically and electromagnetically treating tissue and bone defects or injuries, said method comprising:

securing at least one ultrasonic transducer to a placement band;

securing at least one electromagnetic coil to said placement band;

affixing the placement band on a patient such that said at least one ultrasonic transducer is in proximity to a treatment area adjacent to a bone defect or injury;

exciting said at least one ultrasonic transducer to impinge ultrasonic waves towards said treatment area adjacent to the bone defect or injury;

exciting said at least one electromagnetic coil to create a modulating force to modulate said ultrasonic waves towards said treatment area adjacent to the bone defect or injury; and

selectively positioning the at least one electromagnetic coil in different orientations with respect to the ultrasonic transducer to vary the modulating force to modulate said ultrasonic waves.

20. (Original) The method according to claim 19, further comprising the step of connecting said at least one ultrasonic transducer and said at least one electromagnetic coil to an operating unit, said operating unit having an internal power source.

21. (Original) The method according to claim 19, further including the step of receiving reflected diagnostic data by said at least one ultrasonic transducer.

22. (Original) The method according to claim 19, further comprising the step of orienting said at least one electromagnetic coil at an angle θ with respect to a horizontal axis of said at least one ultrasonic transducer, where θ is greater than or equal to zero degrees and less than or equal to 90 degrees.

23. (Previously Presented) The method according to claim 19, wherein said step of exciting said at least one electromagnetic coil creates a non-uniform modulating force.

24. (Currently Amended) An apparatus for providing ultrasonic and electromagnetic stimulation to a treatment area adjacent to a bone defect or injury, said apparatus comprising:

means for generating and propagating an ultrasound wave towards said treatment area adjacent to the bone defect or injury;

means for generating an electromagnetic field to modulate said ultrasound wave towards said treatment area adjacent to the bone defect or injury;

means for selectively positioning an electromagnetic coil associated with the electromagnetic field in different orientations with respect to the ultrasound generating means to vary the modulation of said ultrasound wave as it propagates along said treatment area adjacent to the bone defect or injury; and

control means for controlling one or more properties of said ultrasound wave and said electromagnetic field at respective times.

25. (Previously Presented) The apparatus according to claim 24, wherein said means for generating an electromagnetic field generates a non-uniform electromagnetic field.

26. (Original) The apparatus of claim 24, wherein the control means comprises a controller for varying spatial distribution of the electromagnetic field.

27. (Previously Presented) The apparatus of claim 24, wherein the control means comprises a controller for varying spatial or temporal generation of the ultrasound wave.

28. (Previously Presented) The apparatus of claim 24, wherein the control means comprises a controller for varying the spatial distribution of the electromagnetic field, which in turn varies the spatial or temporal generation of the ultrasound wave.

29. (Original) The apparatus of claim 24, wherein the properties of the pressure wave are selected from the group consisting of particle displacement, velocity, acceleration, and pressure.

30. (Currently Amended) A treatment assembly for providing ultrasonic and electromagnetic stimulation to a treatment area adjacent to a bone defect or injury, said assembly comprising:

at least one ultrasonic transducer assembly having at least one ultrasonic transducer;

at least one electromagnetic coil assembly having at least one electromagnetic coil operatively associated with said at least one ultrasonic transducer assembly;

a placement module configured to be worn by a patient, said placement module being configured to receive said at least one ultrasonic transducer assembly and said at least one electromagnetic coil assembly such that when said placement module is worn said at least one ultrasonic transducer and said at least one electromagnetic coil are positioned to ~~focus~~ provide energy toward said treatment area adjacent to a bone defect or injury, wherein either said at least one ultrasonic transducer or said at least one electromagnetic coil can be selectively positioned relative to the other to vary the amount of modulation of the energy along said treatment area adjacent to said bone defect or injury; and

a main operating unit for providing at least one driving signal to said at least one ultrasonic transducer assembly for driving said at least one ultrasonic transducer and said at least one electromagnetic coil to provide ultrasonic and electromagnetic stimulation to said treatment area adjacent to the bone defect or injury.

31. (Currently Amended) A method for ultrasonically and electromagnetically treating tissue and bone defects or injuries, said method comprising:

providing a main operating unit having an internal power source coupled to at least one ultrasonic transducer assembly and at least one electromagnetic coil assembly, said at least one ultrasonic transducer assembly includes at least one ultrasonic transducer, said at least one electromagnetic coil assembly includes at least one electromagnetic coil;

providing a placement module configured to receive said at least one ultrasonic transducer assembly and said at least one electromagnetic coil assembly such that when said placement module is secured to a patient's body said at least one ultrasonic transducer and said at least one electromagnetic coil are positioned to ~~focus~~ provide energy towards said treatment area adjacent to a bone defect or injury, wherein either said at least one ultrasonic transducer or said at least one electromagnetic coil can be selectively positioned relative to the other to vary the amount of modulation of the energy;

exciting said at least one ultrasonic transducer to impinge ultrasonic waves towards the treatment area adjacent to the bone defect or injury; and

exciting said at least one electromagnetic coil to create an electromagnetic field towards the treatment area adjacent to the bone defect or injury.

32. (Currently Amended) A method for ultrasonically and electromagnetically treating tissue and bone defects or injuries, said method comprising:

securing at least one ultrasonic transducer to a placement band;

securing at least one electromagnetic coil to said placement band;

affixing the placement band on a patient such that said at least one ultrasonic transducer is in proximity to said treatment area adjacent to a bone defect or injury;

exciting said at least one ultrasonic transducer to impinge ultrasonic waves towards said treatment area adjacent to the bone defect or injury;

exciting said at least one electromagnetic coil to create a modulating force to modulate said ultrasonic waves towards the treatment area adjacent to the bone defect or injury; and

selectively positioning either said at least one ultrasonic transducer or said at least one electromagnetic coil relative to the other to vary the amount of modulation of said ultrasonic waves.